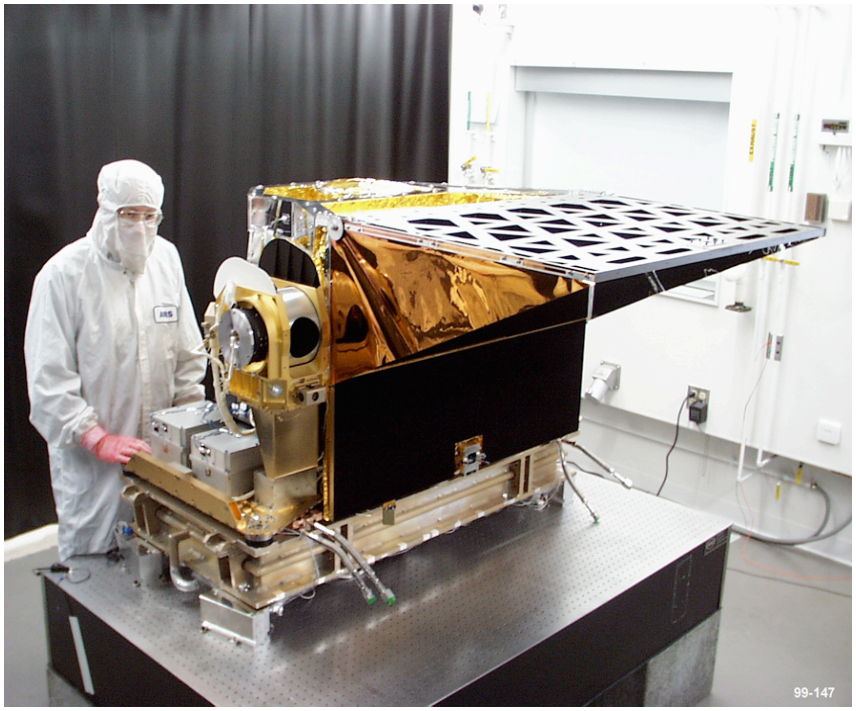
THE ATMOSPHERIC INFRARED SOUNDER (AIRS) SCIENCE TEAM MEETING

CHARTS BY T. PAGANO

May 2-3, 2002

AIRS IS READY FOR LAUNCH



AIRS Requirements

- Instantaneous Field of View : 1.1° x 0.6° (13.5 km x 7.4 km)
- Scan Range: ±49.5°
- IR Spectral Range: 3.74-4.61 μm, 6.2-8.22 μm, 8.8-15.4 μm
- IR Spectral Resolution: ≈ 1200 (□/□□)
- Number of IR Channels: 2378 IR
- VIS Channels: 4 (0.41-0.44 μm, 0.58-0.68 μm, 0.71-0.92 μm, 0.49-0.94 μm)
- VIS Spatial Resolution: 0.14° (1.7 km)
- Mass: 177Kg, Power: 256 Watts, Life: 5 years (7 years goal)

- **Two thermal vacuum cycles at BAE Systems**
- **Delivered to Spacecraft in November 1999**
  - **Environmental Testing**
  - **Comprehensive Functional and Performance Testing**
  - **All command sequences and databases demonstrated end-to-end**
- **AIRS Launch Readiness Review**
  - **Jan. 29, 2002**
  - **Independent Review Board**
- **No Liens on AIRS Hardware**
  - **All P/FRs resolved**
- **Science Data and Software Release Policy established**
- **First Year Milestones established**

POST-LAUNCH OPERATIONS
READY FOR LAUNCH

- AIRS operations manual updated and complete
- In-Flight operational timeline is baselined
- All flight procedures and databases completed
- Aqua delivered to WTR/IPF @ SLC-6: 2/24-25/02
- SCPT #6 completed: 3/18/02
- SCIF#5 Run for Record completed: 3/15/02
- Aqua transported to launch pad @ SLC-2: 4/16/02
- On-stand Aliveness Test completed: 4/20/02
- Final AIRS Red/Green Tag closeouts completed: 4/27/02
- AIRS is properly configured and ready for launch on 5/4/02

AIRS CALIBRATION READY FOR LAUNCH

- Radiometric linearity and OBC BB calibration completed with accuracies less than ±0.2K at 265K for all channels
- Spectral accuracies better than 1% Δ
- Channel spectra in-flight characterization approach verified
- All in-flight special calibration sequences (SCS) (11) demonstrated at TRW
- L1B calibrated radiances algorithms and software validated using L1B testbed
- Long term calibration and high rate telemetry trending software in development

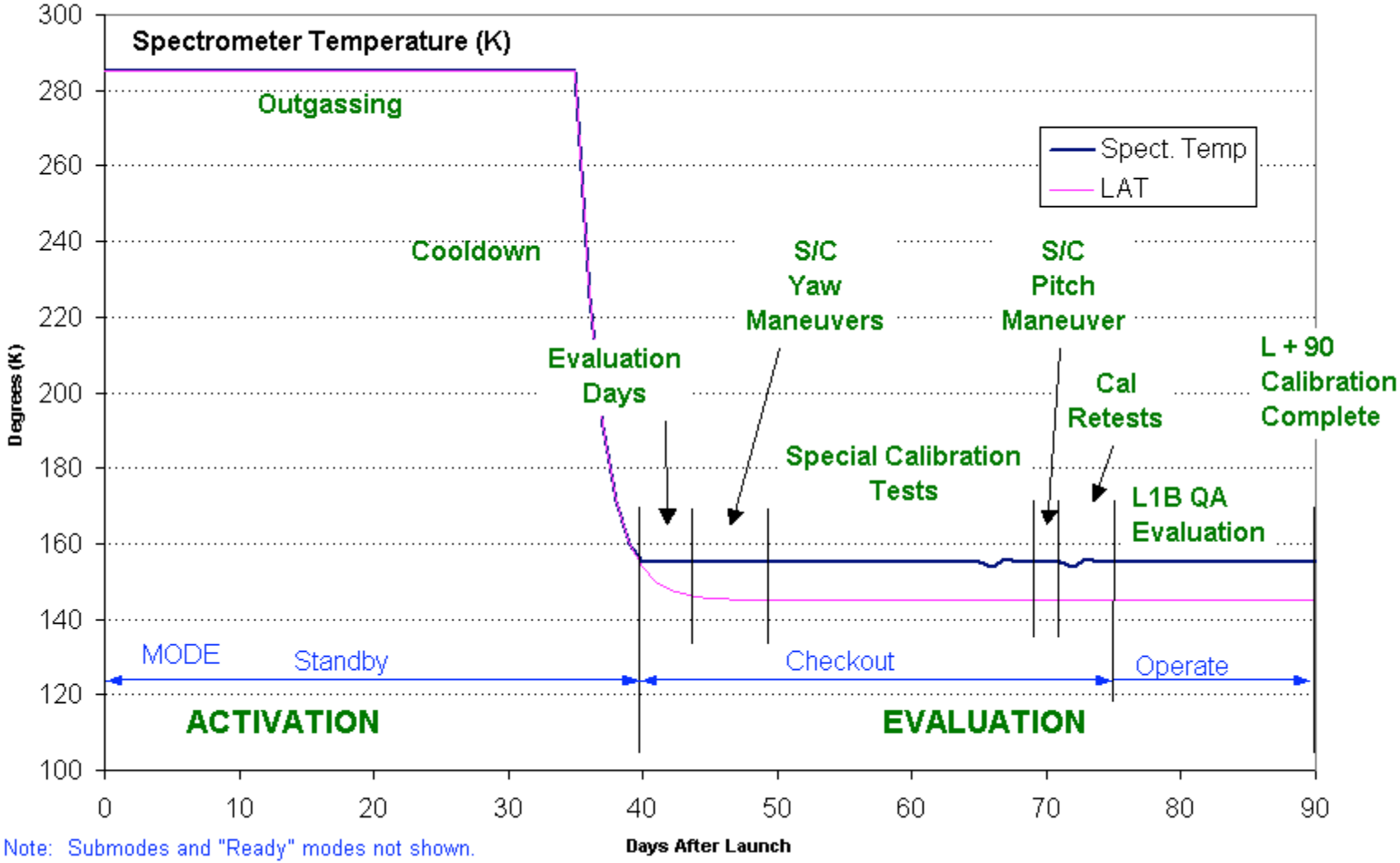
- Steve Friedman to discuss Science Data Processing System

AIRS OPERATIONAL TIMELINE FOR FIRST YEAR

CRITICAL AIRS/AMSU/HSB OPERATIONS EVENTS: FIRST 90 DAYS (Nominal)

- Day 2: AIRS quiet and noisy buses powered on
  Decontamination heaters turned on
- Day 4: AIRS Group 2 power on
- Day 8,9: Power up AMSU and HSB. 1-2 days later limited data starts.
- Day 15: High rate starts. AIRS Scanning, VIS On, Warm Funct'l Tests
- Day 18-31: Spacecraft maneuvers
- Day 29: Earthshield deployed
- DAY 33-37: AMSU and HSB calibration tests
- Day 35: AIRS decontamination heaters turned off
- Day 37, 38: Initialize and turn on coolers and FPAs. AMSU/HSB to Normal Mode
- Day 39: Set Choke Point heater. AIRS Calibration Phase Begins
- Day 39-41: Normal Mode. AIRS First Light (3 days)
- Day 42-48: Spacecraft maneuvers
- Days 49-76: AIRS special calibration tests / Spacecraft Maneuvers
- Days 77: Switch to normal mode. Acquire Focus Day Data (3 Days)
- Day 90: L1B calibration table updates delivered

AIRS ACTIVATION AND EVALUATION PHASE TEMPERATURE DEPENDENCE



Note: Submodes and "Ready" modes not shown.

FIRST 60 DAYS EMPHASIZE ACTIVATION AND L1A/FIRST LIGHT QUALITY

5/2/02		0	Launch		Ops
5/17/02		15	AIRS High Rate Starts;VIS, Microwave First Light		Ops
6/1/02		30	VIS/L1A Sanity Check		ACT
6/12/02		41	IR/MW First Light		Ops/ACT
6/16/02		45	Microwave Instrument hand over review		Proj
6/18/02		47	First Light JPL Review (L1A Focus)		
				Final Inputs by Evaluators for V2.5 (L1A Focus)	ACT/Val
				First Light Sanity Check	ACT/Val
				Pointing and scanset alignment verified	Val
				Release First Light Data to Science Team	SDPST
6/26/02		55	L2 MW software update		
				MW Only level 2 algorithm update	Rosenkranz
				MW Tuning coefficients, GCM-based	L McMillin
7/2/02		61	Science Team Review/L1A Focus Update		
				VIS, Microwave and IR First Light Data Review	ACT/Val/Sci
				Presentations by JPL and Science Team	ACT/Val/Sci
				v2.5 Build Complete at TDS (NOAA ASAP)	SDPST
7/10/02		69	Gain Tables Uploaded		ACT

Red: Action, Blue: Review, Green: Data Release

L+70 to L+3 mo AIRS STABILIZING AND PREPARING FOR OPERATIONAL MODE

7/11/02		70	**Focus Day Acquisition**	ACT/Ops
7/16/02		75	**Focus Day JPL Review**	
			Focus Day Sanity Check	ACT/Val
			Release Focus Day Data to Science Team	SDPST
7/23/02		82	**Pre-90 Day Review**	
			Special Test Data Review	ACT
			v2.5 (L1A Focus) Evaluation of SW Readiness	SDPST/ACT
			Pre Ship Review of v2.5	SDPST
			Science Team Data Review	Val/Sci
			L+90 Press Conference Discussion	Mgmt / Sci
			Special Validation Decision Point	Val
8/1/02	3.0	91	**Aqua Transition to Operational Mode**	
			Press Conference	Mgmt
			Final Gain Tables Uploaded	ACT
			PGS Calibration Tables Update at TDS (NOAA ASAP)	ACT
			L1A Focus PGS (V2.5) Delivery to DAAC/NOAA	SDPST
			Release Sample Data to DAAC	ACT/Val/SDPST
			Uninterupted AIRS Data Available to Science Team	Sci

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L+3mo to L+9mo FOCUS ON L1B DEVELOPMENT AND PUBLIC RELEASE

9/1/02	4.0	122	**L1B Focus Evaluation Review**	
			Final Inputs by Evaluators for V2.7 (L1B Focus)	ACT/Val/Sci
10/1/02	5.0	152	**L1B Focus Update**	
			V2.7 Build Compete at TDS (NOAA ASAP)	SDPST
			Reprocessing Begins on Data since stable	SDPST
			Regression coefficients, GCM based	Goldberg
			Tuning coefficients, GCM based	McMillin
			Angle Adjustment coefficient if not nominal freq	McMillin
12/1/02	7.0	213	**L1B Focus Pre Ship Review**	
			v2.7 (L1B Focus) Evaluation of SW Readiness	SDPST/ACT/Val
			Pre Ship Review of V2.7	SDPST
			Science Team Review of Operational Mode	Val/Sci
			Final Inputs by Evaluators for V3.0 (L2 Focus)	ACT/Val/Sci
			Final RTA coefficients	Strow
			L1B Focus PGS (V2.7) Delivery to DAAC/NOAA	SDPST
12/31/02	8.0	243	**L2 ancillary file update**	Science Team
			Regression Coefficients	Goldberg
			Tuning Coefficients	McMillin
			Angle Adjustment coefficient	McMillin
1/31/03	9.0	274	**L1B Public at DAAC / L2 Update**	
			V3.0 Build Compete at TDS (NOAA ASAP)	SDPST
			Reprocessing Begins on all Data to date	SDPST
			Public Release of L1B (V2.7) Data at the DAAC	DAAC

Red: Action, Blue: Review, Green: Data Release

L+10mo to L+12mo FOCUS ON L2 DELIVERY AND PUBLIC RELEASE AT DAAC

3/5/03	10.1	307	**L2 Ship Review**		
				L2 Focus Evaluation of SW Readiness	SDPST/ACT/Val
				Pre Ship Review of V3.0	SDPST
				Science Team Review of L2 in Operational Mode	Val/Sci
				L2 Focus PGS (V3.0) Delivery to DAAC	SDPST
5/2/03	12.0	365	**L2 Public at DAAC/ First Year Assessment**		
				First Year Assessment	SDPST/ACT/Val/Sci
				Public Release of L2 (V3.0) at the DAAC	DAAC

Red: Action, Blue: Review, Green: Data Release